

CLAIMS

1. A material suitable for use in the manufacture of a shoe stiffener consisting of a stiffener composition between two layers of sheet material, the stiffener composition including a polymeric material which is stiff at ambient temperature below 50°C but is pliable and adhesive at an elevated temperature between 50°C and 90°C and has a melt viscosity measured at 100°C in the range from 100 Pas to 10,000 Pas and wherein at least one of said layers of sheet material has openings therein in a size range from 0.15 mm<sup>2</sup> to 5 mm<sup>2</sup>.
2. A material according to claim 1 wherein the elevated temperature is in the range from 60°C to 80°C.
3. A material according to either one of claims 1 and 2 wherein the melt viscosity of the polymeric material at 100°C is in the range from 900 Pas to 2500 Pas.
4. A material according to any one of the preceding claims wherein the openings have a size range from 0.3 mm<sup>2</sup> to 1.5 mm<sup>2</sup>.
5. A material according to any one of the preceding claims wherein the shoe stiffener material is from 0.4mm up to 2.00mm in thickness.
6. A material according to any one of the preceding claims wherein the stiffener composition comprises between 85% and 30% by weight of said polymeric material and 15% and 70% by weight of particulate filler.
7. A material according to claim 6 wherein the particulate filler has a

size between 50 microns and 500 microns.

8. A material according to claim 7 wherein the size of the particulate filler is between 100 microns and 400 microns.

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9. A material according to any one of claims 6 to 8 wherein the filler is mica.

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10. A material according to any one of claims 6 to 8 wherein the filler is talc.

11. A material according to any one of the preceding claims wherein the polymeric material comprises polycaprolactone.

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12. A material according to any one of claims 1 to 10 wherein the polymeric material comprises poly(tetramethylene-adipate).

13. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is a woven fabric.

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14. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is a knitted fabric.

15. A material according to any one of the preceding claims wherein at least one of said layers of sheet material is an apertured non-woven fabric.

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16. A shoe stiffener comprising a material in accordance with any one of the preceding claims.

17. A method of incorporating a shoe stiffener according to claim 16 with a shoe upper component comprising positioning the stiffener with one of said layers of sheet material with openings therein in face-to-face contact with the upper component, before or after said positioning heating the stiffener to a temperature between 50°C and 90°C at which the polymeric material becomes pliable and flowable under pressure, and whilst the polymeric material is still flowable pressing the stiffener against the upper component under pressure sufficient to cause sufficient of the polymeric material to be expelled from the layer of stiffener composition through said openings, shaping the upper component and contacting stiffener to a desired shape and cooling the polymeric material or allowing it to cool, whereby the stiffener is bonded to the upper component by the expelled polymeric material and provides stiffening of the upper component.

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